

## ABSTRACT

Method and apparatus for controlling access to a secure network, system or application is disclosed. In one embodiment, an apparatus for requesting authentication includes a storage medium that stores a cryptographic key, a processor that generates an access code using the cryptographic key, a converter that converts the access code into sound waves, and an audio output unit that outputs the sound waves encoded with the access code for authentication. An apparatus for granting authentication includes a storage medium that stores a cryptographic key, an audio input unit that receives sound waves encoded with a access code, a converter that recovers the access code from the sound waves, and a processor that generates a second access code using the cryptographic key and grants authentication if the access code corresponds to the second access code.